Behavior Change Project with a Young Child Diagnosed with Autism

An Honors Thesis (HONRS 499)

by

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Shane[1], the participant in the study, is a blind six year old diagnosed as having autism. According to information received from Dr. Feldman, Shane's blindness is due to a rare disorder called Septo-optic dysplasia (SOP). This disorder causes an incomplete development of the optic nerve. There are 200 known cases worldwide. Shane currently lives with his mother and a ten year old sister. Due to reports from Melissa[1], Shane's mother, to a family doctor of Shane putting his head through a window, head banging, and repetitive spinning motions, he was given Benadryl. However, due to the ineffectiveness of the medication on 8/28/90, Shane's doctor recommended a "strong behavioral adaptive program" to meet Shane's needs. He is currently placed in the Moderately Mentally Handicapped class at Morrison Mock Elementary School.

According to Shane's mother and a behavior specialist/ counseling psychologist at Hillcroft Center, the following behavior problems were identified: sleep disorder, pica, verbal abuse, physical assault, extreme irritability, hyperactivity, temper tantrums, wandering, roaming and running away, excessive

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withdrawal, self-injurious actions, property destruction, resisting supervision, and stereotypical behaviors. In contrast, Shane's HomeStart teacher and his preschool teacher identified his behavior problems as follows: physical assault, resistance to supervision, a sleep disorder, self stimulatory behavior, self-injurious behaviors, excessive withdrawal, and temper tantrums. Of the above behaviors, only the sleep disorder, as reported by Shane's mother, was successfully resolved.

A program was developed in June, 1988, by the behavior specialist/counseling psychologist at Hillcroft Center and initiated on June 6, 1988, at the center. The program included behavior guidelines to be used at home and at the preschool. These guidelines include providing a highly structured and predictable schedule both at home and at the preschool so that he can anticipate routine events occurring at certain times, providing a highly predictable set of environmental-social boundaries (e.g., "rules of the room"), and developing a sleeping schedule to be adhered to at home (e.g., when to go to sleep, when to get up, when to get dressed/undressed, etc.). In addition to these techniques, the following techniques were to be used: redirecting Shane to the ongoing activity each and every time without emotional or verbal reaction when he chooses to become physically assaultive; upon observing self stimulatory behavior or self-injurious behavior, Shane was to be redirected into a new activity of relatively quick and continuous pace without any comment on the maladaptive behavior and instead of anticipating or interpreting

his communicative intent, provide opportunity and expectation of Shane to use functional language to obtain desired items (e.g.,drink). Finally, resistance to supervision was to be responded to by partial to full physical assistance on the specified task or activity. In addition, the psychologist suggested to use successive approximations of participation, simplify the task or activity, restructure the activity to make it more interesting, frequently praise approximations of participation, and provide a terminal reinforcer at the completion of the activity or task.

In addition to the above behavior guidelines, a consultant at the Indiana School for the Blind developed a "walking" program for Shane. This program was initiated in the preschool setting on June 6, 1988. The purposes of the program were, in part, as follows: to provide a structured activity for Shane within a predictable time frame, to improve conversational language skills, and to provide a reinforcing activity. Further, the program was to be used to promote cooperative behavior and to demonstrate to Shane that a functional relationship can exist between participation and reward.

The above programs were used until Shane graduated from Hillcroft in the Spring of 1990. However, according to Shane's mother, Shane continued to demonstrate problem behavior. Furthermore, there was not any data available to indicate the seriousness of the problem behaviors before the treatment programs were implemented or the seriousness of the problem behaviors at the

conclusion of the programs.

The following activities were undertaken by Dr. David Feldman, habilitation consultant, between October 24, 1990, and February 1, 1991, in order to provide a current behavioral evaluation on Shane and his interpersonal and physical environments: structured interviews with family and friends and the professional staff at Hillcroft who were involved with Shane; and observations of Shane in his two classroom placements at Morrison Mock Elementary School and in his home and homes of relatives and friends. Dr. Feldman also conducted direct clinical interactions with Shane in his home and in the home of relatives. In the home setting, with Shane's mother as the informant, Dr. Feldman administrated a reinforcement survey and the Behavioral Impediments Scale (BIS) (revised). In addition to these behavioral evaluation activities, a review of the characteristics of persons with autism, a literature search on the characteristics of septo optic dysplasia, and their implications for habilitative programming were undertaken. Finally, a review and analysis of collateral educational and psychological data from Hillcroft Center, the Indiana School for the Blind, Riley Hospital Department of Pediatrics, and two psychoeducational reports from a consulting educational diagnostician was accomplished.

The Behavioral Impediments Scale (BIS) was administered to Melissa in the home environment over two interviews in late October, 1990. Shane's score was 386.00. This score was judged to be highly deviant when compared to other children of Shane's chronological age.

Based on the results of the BIS, Shane exhibits behavior problems in the following areas: pica (i.e, mouthing, chewing, and licking non-food objects such as neck and sleeve of shirt); verbal abuse (i.e., language hostile in tone, yelling or screaming intelligible or unintelligible threats of violence such as screeching without designating a specific target person); and physical assault (i.e., light pinching, biting, scratching, or banging his head against the chest of the target person that is purposeful, but does not appear to cause pain to the target person). Concurrently, Shane exhibits extreme irritability (i.e., anger in an overly reactive manner such as screeching, hitting self with closed wrist, banging head 3-4 times against wall); hyperactivity (i.e., moving about an area continuously, turning in circles, walking around, picking up a toy and throwing it down over and over again in a seemingly random and very rapid fashion); and temper tantrums (i.e., yelling loudly, thrashing about, kicking, crying, and presenting what appears to be imminent danger to others). In addition to the above behaviors, Shane exhibits problems with wandering, roaming and running away (i.e., running away, climbing the fence, or wandering out of sight and not returning when called even though within hearing distance); depression or extreme withdrawal (i.e., ignoring peers even when they initiate interaction, ignoring adults most of the time when they initiate interaction). However, he may choose to interact with others (i.e., peers, adults) if the interaction is his choice to initiate. Shane also demonstrates problems with self-injurious

actions (i.e., biting arm one time, hitting self with wrist to head, banging head against door, wall, or window). Finally, Shane exhibits problem behaviors in the areas of property misuse/property destruction (i.e., purposefully damaging own or other's property such as opening the door to the oven or dryer and standing on it; opening refrigerator, dropping toys, tearing posters, repeatedly knocking over a magazine rack, tearing wallhangings or anything he can get his hands on), resulting in a projected negligible or minor repair/replacement cost; resisting supervision (i.e., refusing to comply with demands to cease behavior or to cooperate), thus significantly disrupting ongoing activities or the living unit in general; and stereotypical behavior (i.e., repetitive motor or verbal activity such as turning in circles, repeating what people say, talking constantly, perseverative speech which does not serve meaningful purposes). Furthermore, based on anecdotal school reports, all of the above behaviors have also been observed at school.

During the observations of and interactions with Shane by Dr. Feldman in two classroom settings at Morrison Mock and in the home of his mother and sister as well as the home of his grandmother, Dr. Feldman was able to directly validate most of the behavior problems identified on the BIS. The directly observed behaviors were pica, verbal abuse, physical assault, property misuse/destruction, extreme irritability, wandering, roaming and running away, resistance to supervision, withdrawal, hyperactive behaviors, self-injurious actions, and temper tantrums.

Melissa and Keith[1] completed the ETR Reinforcement Survey to identify possible rewards that could be utilized in a behavior management program for Shane. The following is a listing of potential edible reinforcers to use with Shane: chicken hot dog, cheeseburger, spaghetti, mashed potatoes, french fries, eggs, grape jelly on toast, potato chips, macaroni and cheese, crackers, cake doughnut, cake, ice cream, M&Ms, jelly beans, chocolate bar, cookies, Tang, and Gatorade. Also, potential non-edible reinforcers were identified as playing with stuffed bear, any recorded music, games (e.g., pegboard, bean bags, playing "pony boy" and other knee bouncing games), climbing, swinging, radio, rhythm instruments, trampoline, playing with a ball, using playground slide, and playing in the wading pool or bathtub. Finally, possible social reinforcers to be used with Shane were talking on the phone, being cheered, being swung, and clapping hands and saying "yea". Also, results from the ETR Reinforcement Survey indicated several of Shane's strong dislikes. It appeared Shane strongly disliked haircuts, manicures, cold cuts, potato salad, lettuce, corn, carrots, celery, and coffee.

Based on the above evaluations and results, Dr. Feldman recommended a behavioral consultation model to change Shane's behavior. Elements of the model included developing a habilitative behavior management program, training family members and family support personnel to carry out procedures outlined in the program, using reinforcements effectively, and using proper data collection

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procedures. In addition, the behavioral consultant, Dr. Feldman, was to provide technical to support to the school's psychological services to insure a unified approach to Shane's behavior change program across settings, coaching, modeling, and feedback to family members on the plan's effectiveness. Finally, he was to be responsible for assistance in making needed revisions in the program, in finding appropriate personnel who would assist the family in carrying out the program, and attendance at case conference meetings on Shane's progress in the program. Furthermore, the author of the paper served as the home support habilitative behavior management assistant to provide family support by sharing the time and effort requirements to effectively carry out the behavior management, habilitative, and data collection procedures. Finally, the author of the paper was responsible for working with family members to assist in Shane's behavior change, assisting in the training of respite care providers, and developing various learning activities to be used with Shane. The treatment program to be used with Shane was developed by Dr. Feldman, behavior and habilitation consultant, in April of 1991.

Method

Definition of Target Behaviors

Due to the fact that Shane has identified problems in the following areas: pica behavior, verbal abuse, physical assault,

extreme irritability, hyperactivity, temper tantrums, wandering/roaming/AWOL, resisting supervision/boundary breaking, self injurious actions, extreme withdrawal, property misuse/destruction, and stereotypical behaviors; it is necessary to prioritize these behaviors in such a manner that the behavior management plan can be efficiently evaluated in terms of its effectiveness on Shane's behavior. Thus, the major priority will be identified as *temper tantrum or tantrum-related behavior.* Temper tantrum or tantrum-related behavior is defined as any incident in which Shane yells loudly, screams, screeches, thrashes about while standing or on the floor, kicks and/or cries, knocks over objects, sweeps objects off the table, hitting himself with closed wrist, banging his head against objects, pinching, biting, scratching, banging his head against the chest of a target person, mouthing, chewing, and/or licking of non-food objects when angered or punished, or non-compliance.

Research Design

Due to ethical considerations, the Basal/Treatment (AB) design was used with this program. It would have been unethical to remove treatment procedures due to the severity of the problem behaviors and the life-threatening nature of the behaviors. Thus, instead of a period of baseline, the first three weeks of treatment were designated the basal period (i.e., average of an initial predetermined period of treatment) for the program to eliminate unethically removing treatment procedures considering the life-

threatening nature of the problem behaviors displayed by Shane.

Program Training

Training for the program was provided by Dr. Feldman for the author of the paper--habilitative behavior management assistant--and Melissa over a five day period consisting of a total of 17 hours of training beginning on May 13, 1991. The training period involved the following activities: reading and discussion of the Habilitative Behavior Management Program and development of a list of needed materials and reinforcers. Also, the training period included meetings between Shane and the author of the paper to establish rapport using the noncontingent reinforcement method (e.g., reinforcing every appropriate behavior displayed by Shane) at the rate of 3 incidents per minute of reinforcement using M&Ms, pats on the back, and verbal praise (e.g., "Good Shane", "Yea") as reinforcers. Finally, the training period involved sessions where Melissa and the author of the paper observed Dr. Feldman implementing the program with Shane and sessions where Dr. Feldman observed Melissa and the author of the paper implementing the program with Shane.

Data Collection and Analysis

Data was collected on three items. These items were temper tantrum or tantrum-related behavior, time out, and quiet training.

Incidents of temper tantrum or tantrum-related behavior were

defined as any occurrence of any part of the above defined target behavior that was not separated by at least 60 seconds of other behavior (e.g., target behavior continued for two minutes, not separated by any other behavior such as stopping for at least 60 seconds = one incident of temper tantrum) or (e.g., target behavior continued for two minutes and then stopped for at least 60 seconds and then started again = two incidents of temper tantrum).
All occurrences of temper tantrum and tantrum-related behavior were recorded on a daily basis immediately following the incident. In addition, any occurrence of time out and/or quiet training contingency management techniques, were recorded on a daily basis immediately following the incident (See Appendix A).

Further, data was analyzed on a daily and weekly basis. The total number of incidents of each collected item, temper tantrum or tantrum-related behavior, time out, and quiet training for each day was divided by the number of hours in that day that the program was being implemented to find the frequency per hour of each item. Also, data was analyzed on a weekly basis by adding each individual day's frequency per hour and dividing by the number of days in that particular week that the program was in effect (See Appendix A). Finally, all frequencies were then plotted on daily and weekly graphs.

Treatment

Treatment procedures included environmental, curricular, and contingency management methods.

Environmental methods. Environmental methods included the following: designated care provider, close supervision and monitoring, immediate and consistent response to inappropriate behavior, and required compliance. In addition, other environmental methods included the use of redirection and graduated guidance to require compliance, telling expectations in a positive way, consistent boundaries, and progressive freedom of movement. Finally, the following environmental methods were used: a comprehensive daily schedule, structure, and sequence or routine and instructional activities; increased number of direct instructional sessions; frequent shifts in activity type and context; and providing environmental equipment that allowed rocking, climbing, swinging, and running.

The designated care provider method suggested that only one adult at any one time was to be primarily responsible for implementing the suggested behavior management procedures for Shane. This person was also be responsible for any data collection.

The close supervision and monitoring method in the initial stages of the program included the care provider staying as physically close to Shane as possible in order to supervise and guide his behavior. As his behavior improved gradually over time (e.g., more compliance, appropriate toy play, appropriate use of leisure time), the care provider moved further and further away from him in order to monitor his behavior.

Immediate and consistent response to inappropriate behavior

suggested that in order for Shane to understand the direct relationship between his performance of inappropriate behavior and the environmental responses/consequences of those behaviors, the care provider immediately carried out the planned responses to inappropriate behaviors, each and every time, as they began to occur.

The method of required compliance recommended that when the care provider made reasonable requests of Shane to perform a desired behavior or to cease the performance of an inappropriate behavior, the care provider used the following suggestions to require compliance of the request. First, having very close physical proximity, the care provider would go over to him, touch him lightly and say, "Shane, listen." If he responded, he was praised for listening. If he did not respond to the verbal cue, he was physically guided to face the care provider; and the care provider repeated the verbal cue as he/she guided him. Secondly, the request made was to be brief and to the point (e.g., "Shane, stay on the chair"). If he complied, he was praised. Finally, the care provider was to follow through. For instance, if he did not begin to comply immediately, he was physically guided to do so as the care provider repeated the request. Only the minimum amount of physical guidance necessary was used in order for him to comply with the request. This procedure was used each and every time a request was made of Shane. If he did not begin to respond within 5 seconds, it was assumed that he was not going to comply, and the procedure to require compliance was immediately carried out.

Also, redirection and graduated guidance methods were used in sequence to require compliance. Whenever Shane began to engage in an inappropriate behavior or refused to engage in a scheduled activity, the following sequence was immediately carried out:

Step one: Going to him, saying his name, and lightly touching him on the shoulder. He was routinely told one time what was expected of him (e.g., "Shane, time to eat.", "Shane, time for bed.", etc). He was rewarded with an edible reinforcer and physical and verbal praise if he complied. A normal tone of voice was used. Also, a flat/unemotional voice was used.

Step two: The request was repeated after 5 seconds following the conclusion of the initial request. He was rewarded as indicated above if he complied.

Step three: The request was repeated after 5 seconds following the conclusion of the step two request, and he was lightly touched on the shoulder. He was rewarded with only physical and verbal praise if he complied.

Step four: The request was repeated after 5 seconds following the conclusion of the step three request, a hand was placed on his shoulder, and he was gently directed away from the inappropriate behavior and toward the desired activity. The minimum physical assistance necessary was used for Shane to comply. He was rewarded with physical and verbal praise if he

complied.

Step five: Shane was assisted to engage in the next scheduled activity. Only the minimum amount of guidance necessary was used for him to engage in the activity. He was rewarded with physical and verbal praise when he complied.

Step six: If Shane continued to refuse to cease his inappropriate behavior or to engage in the desired activity or behavior following the use of the previous five steps, the reactive contingency management method was used.

In addition, another environmental method used was telling Shane what was expected of him in a positive way. Using the terms "no", "don't", "stop", etc. were avoided. He was told what was expected of him instead (e.g., "come here", "put pots away", "stay in this room", "finish eating", etc.).

Also, the use of consistent boundaries was an environmental method utilized. In order for Shane to decrease his boundary breaking behavior, he was provided with consistent boundaries. For instance, certain areas and objects were always off-limits. These areas were identified and marked with yellow ribbon (e.g., refrigerator, dryer, air conditioner, fence). Shane was taught what could be entered, touched, and appropriately used. Also, Shane was taught what was off-limits/out-of-bounds (i.e., what could not be entered, touched, or used). The required compliance procedures and the levels of supervision and monitoring procedures

were used to assist Shane in learning boundaries.

Further, the progressive freedom of movement environmental method was used. This method worked hand-in-hand with the consistent boundaries method. Until Shane could discriminate and adhere to boundaries related to areas, objects, and the use of objects, he was physically limited in his movement and activities to places strictly within the training area.

The use of a comprehensive daily schedule, structure, and sequence of routine and instructional activities was utilized in this program. Shane could not be in charge of his daily routine (e.g., doing whatever he wanted when he wanted to or making others do what he wanted when he wanted them to). Therefore, a detailed schedule of routine and instructional activities was developed and implemented during Shane's waking hours in the home. Instructional activities included language, preacademic, motor, self help, and recreation/leisure areas. There were periods of time in which the care provider engaged in parallel activities (i.e., activities that did not involve Shane but were in the same room). During these parallel activities, Shane was to be playing by himself in an appropriate manner. Shane's activity schedule engaged him in structured small group activities, individual programming, and/or responsibilities throughout his home days and evenings. The schedule had concrete objects arranged in sequence that corresponded to as many activities as possible. As a rule, 15-20 minute periods during Shane's waking hours were structured this way. For example:

Monday

6:30 A.M. Wake up

6:50 A.M. Brush teeth, comb hair

7:10 A.M. Get dressed

7:30 A.M. Eat

And so on...

Shane's schedule was carried out in a consistent manner with the same activities occurring in the same order each weekday. However, weekend and vacation days varied somewhat. Each adult who worked with Shane attempted to make the activities as rewarding as possible.

Additionally, the environmental method of using an increased number of direct instructional sessions was utilized with Shane. In order for Shane to show greater progress on language, motor, preacademic, self-help, and recreation/leisure skills, he was provided with more than the normal number of direct, individual instructional sessions typically offered on a daily basis. Although the total number of skills presented for instruction did not necessarily increase, the lessons were at least doubled to increase the intensity of instruction. This increase in daily instructional sessions allowed Shane to show more rapid growth in critical language, motor, preacademic, self help, and recreation/leisure skills. Furthermore, all care providers conducted Shane's instructional sessions.

Another environmental method that was used with Shane was frequent shifts in activity type and context. Given Shane's

current motor activity level and attention span, he was provided with numerous activities that were short in length. Also, shifting the type of activity from sitting to standing to lying down, and from passive involvement to active movement, helped Shane to control his motor behavior, maintain his interest, and increase his attention span. Every effort was made to provide Shane with direct continuous programming throughout the day.

Finally, in the area of environmental methods, Shane was provided environmental equipment that allowed rocking, climbing, swinging, and running. Shane likes to rock, climb on things, and move around. Like most children his age, he likes intense levels of motor stimulation because it feels good. Therefore, his home environment was provided with equipment, training to use the equipment, and opportunities to use the equipment in a appropriate manner. A rocking chair, a wading pool, a trampoline, and a swing set were available and used frequently on a daily basis to provide acceptable outlets for Shane's need for motor stimulation.

Curricular methods. Curricular methods used included teaching appropriate play behaviors, teaching active recreational motor skills, and providing discrimination training.

The curricular method of teaching appropriate play behaviors was used with Shane in this program. Since Shane had a need for intense motor stimulation, it was important to teach him how to play. The play skills were used to help replace his pica, wandering, hyperactivity, and stereotypical behaviors. The

teaching of the new play behaviors began with selecting basic play skills, skills for playing alone, and playground skills.

The basic play skills that were taught directly and in an adapted manner to Shane included paying attention to someone speaking, paying attention to music, grasping or holding large toys or objects, and pushing, pulling, and turning toys. Other basic play skills taught were naming toys and objects used in play, naming body parts, following directions (e.g., giving or taking toys, opening and closing lids or doors, and carrying toys from place to place), and sitting alone for up to 5 minutes.

Skills for playing alone that were taught to Shane included sitting unattended for 5-10 minutes, scribbling with crayon on paper, and coloring in coloring book (mostly inside the lines with assistance). In addition to the above mentioned skills, the following skills for playing alone were also taught: doing simple non-interlocking formboards puzzles, doing interlocking formboard puzzles, and playing with battery operated toys or devices. Moreover, playground skills that were taught to Shane included swinging on a swing and going up and down a slide (climbing and sliding).

After choosing skills to teach, the skills were task analyzed (i.e., broken down into small, teachable parts). Next, Shane was taught the play skills under the following conditions: a time period that provided individual attention, a time period in which he was not too tired or excited, and sessions no longer than 10-15 minutes. In addition, a learning environment was selected that was

as distraction-free as possible; and materials were used that were interesting, easy to hold and move, not too heavy, safe, and relatively unbreakable.

The instruction of play behavior involved directing or trying to get Shane to perform a task and responding or the adult responding to his performance. Directing began with providing Shane with clear directions by telling him, showing him, and guiding him. Instructions given to Shane began with his name, were short, included only words he understood, and were spoken clearly and firmly (e.g., "Shane, put your foot on the pedal.").

Further, all skill steps were modeled by first getting Shane's attention and guiding him by holding his hands and taking him through the motions while simultaneously providing verbal cues. Eventually, the hand over hand guidance was faded (e.g., using thumb and forefinger, holding at the wrist, holding at the elbow, holding at the upper arm, holding at the shoulder, etc.) until Shane responded correctly with only verbal directions. Each instructional session ended with a successful trial even if it meant going back to a step previously achieved.

Responses to Shane's performance involved rewarding certain responses and not rewarding other responses. If Shane made some attempt at the task (e.g., not perfect, but tried) or he performed the task successfully, he was rewarded with attention (e.g., smiles, hugs, kisses, clapping, cheering, patting on the back, and praise "Nice try", etc.). However, if Shane did not respond to the

task, or attempted to do something other than the task, his misbehavior was not attended to. Instead, he was guided through the requested response. Finally, all sessions were followed with a rewarding activity.

In addition to the above curricular method, the curricular method of teaching active recreational motor skills was used. Using the instructional procedures for play discussed above, Shane was taught active recreation skills to provide him with opportunities to climb, run, manipulate objects, etc. These skills involved both indoor and outdoor activities that included swinging on a swing, playing on a teeter-totter, playing in a wading pool, and learning to tumble.

Further, another curricular method used was providing discrimination training. Shane's need to climb, move about, and explore objects is developmentally appropriate for all children. However, Shane was climbing on things that should not have been climbed on, moving about at inappropriate times as well as moving without a purpose, and exploring out-of-bounds objects. Therefore, he was taught what he could climb on, when he could move, and what objects he could explore. So, when inappropriate behaviors occurred, Shane was immediately redirected verbally and physically to activities in which these behaviors were acceptable.

Contingency management methods. Contingency management methods included time out and quiet training. These methods were used only if non-compliance would not cease under redirection and

graduated guidance or Shane engaged in an incident of temper tantrum or tantrum-related behavior and it would not cease under redirection and graduated guidance.

The time out method was primarily used to prevent Shane from the opportunity to be rewarded or participating in a reinforcing activity for a given period of time. In Shane's case making sure that he received no reinforcement during time out was particularly important because adult attention was a major reward for him. The suggested time out procedure for Shane involved the use of a "time out rug". When non-compliance would not cease under redirection and graduated guidance or Shane engaged in an incident of temper tantrum or tantrum related-behavior and it would not cease under redirection and graduated guidance, the designated care provider directed Shane to time out in the following manner. He was communicated to in a calm, businesslike tone of voice (e.g., "Shane, stop that. No (state the target misbehavior). Go sit on the time out rug."). If Shane went immediately to the time out rug and sat down, a timer was set for two minutes, and he was told to, "Sit until the bell rings". However, if Shane did not immediately stop the misbehavior, the minimum amount of physical guidance was used to stop the incident; and when the misbehavior stopped (or if the tantrum continued), he was assisted to go sit on the time out rug. If Shane continued to resist going to the time out rug or did not initiate moving to the time out rug within 5 seconds, the request was repeated one time. If he complied immediately, he was not assisted. If he did not comply immediately, he was physically

assisted with the minimum amount of guidance necessary to accomplish the movement. After Shane had sat on the time out rug for two minutes with the last 15 seconds calm, he was verbally directed back to his previous activity. Within the first minute that Shane returned to his activity, he was praised for any appropriate behavior he displayed. But, if Shane attempted to get off the time out rug prior to the end of the interval or he did not show calm behavior for the last 15 seconds of the two minute period, the quiet training method described below was used. When the quiet training method as described below was completed, the time out method was reinstated for the full two minute period with the last 15 seconds required calm. Finally, the time out method could be used any number of times, daily as needed, for up to a maximum of 10 minutes in any single use.

In addition to the time out method, quiet training was another contingency management method used. Quiet training was used only under the following conditions: when Shane did not achieve the 15 second calm criterion that concluded the two minute interval of the time out method or when Shane attempted to get off the time out rug prior to the end of the two minute interval.

The purpose of quiet training was to more directly intervene when Shane did not achieve the purpose of time out (i.e., quiet/calm behavior). Therefore, quiet training required Shane to practice quiet/calm behavior with adult intervention as needed to carry out the procedure. Quiet training was carried out in the following manner. If Shane attempted to get off the time out rug

prior to the expiration of the interval or did not quiet/calm down for the last 15 seconds of the interval, he was told to "Lie down.". Lying down meant that Shane was to lie down on the rug with his stomach toward the floor, his arms outstretched, his legs flat on the floor, and his head lying sideways on the floor or on a pillow. The least amount of physical assistance necessary was used to maintain his position. The care provider was to be located behind him around belt level and on his/her knees. Next, a timer was set for two minutes. Shane was required to achieve the 15 second quiet/calm criterion for the two minute interval. If Shane attempted to get up before the bell had rung, the timer was reset for another two minutes. At the end of the two minute interval with the last 15 seconds quiet/calm, Shane was directed to sit up on the rug. The timer was reset for two minutes and the time out procedure described above was reinstated. Finally, the quiet training procedure could be used as many times as necessary, daily, when the time out rug method was insufficient to produce quiet/calm behavior.

Results

The effect of the treatment procedures on the rate of tantrum and tantrum-related behavior indicates a decrease in the behavior over the 22 week treatment period. However, the range in variability of Shane's behavior increased. An average of 1.1 incidents per hour of tantrum and tantrum-related behavior were

recorded during the three week basal period (i.e., the first three weeks of treatment). Following the 22 weeks of treatment, the average number of incidents per hour of tantrum and tantrum-related behavior was .62 incidents per hour. Therefore, there was a 44% decrease in the number of tantrum and tantrum-related behaviors following treatment procedures. Further, the range of tantrum and tantrum-related behaviors during the basal period was .9 to 1.3. The difference in range was .4. After 22 weeks of treatment, the range of tantrum and tantrum-related behaviors was .29 to 1.4. The difference in range was 1.1. However, even though the range in variability of Shane's behaviors increased, his lowest incident rate per hour per week was better (see Figure 1).

During the three week basal period, the average rate of time outs per hour were .38. The average rate of time outs per hour after treatment procedures were .14. There was a 63% decrease in the number of incidents of time out following the 22 weeks of treatment. However, there was not any change in the range. The weekly average of time outs per hour ranged from .22 to .46 during the basal period and from .01 to .25 during treatment procedures. The difference in range during the basal period and during the treatment period was .24. However, even though the variability remained the same following treatment procedures, the incidents of time out recorded were at a much lower level (see Figure 2).

An average of .25 incidents per hour of quiet training was recorded during the basal period. This number decreased to .08 incidents per hour following treatment procedures, indicating a 68%

change following 22 weeks of treatment. There was a range from .18 to .32 during the basal period with a .14 difference in range. The range during the treatment period was from 0 to .16 with a .16 difference in range (see Figure 2). Again, the range increased following treatment procedures indicating more variability in Shane's behavior. However, even though results indicate an increased variability in range, the need for quiet training following treatment procedures occurred at a lower level.

Results indicated that following treatment procedures, there was decreased need for using time out with tantrum and tantrum-related behavior. During the basal period, it was necessary to use time out procedures to cease tantrum and tantrum-related behavior or to require compliance 35% of the time. Following treatment procedures, it was necessary to use time out with non-compliance or tantrum and tantrum-related behavior 23% of time.

Finally, results showed that during the basal period it was necessary to use quiet training procedures with time out 66% of the time. Following 22 weeks of treatment, this percentage dropped to 57%.

Discussion

Implementation of the habilitative behavior change program over the past 22 weeks with Shane indicates that the program was beneficial in several respects. First, the data shows that the number of incidents of tantrum and tantrum-related behavior

displayed by Shane did decrease following treatment procedures. Also, the data indicates a decrease in the number of incidents of time out and quiet training used to cease non-compliance or tantrum and tantrum-related behavior. Therefore, it appears that non-compliance and tantrum and tantrum-related behaviors are being ceased using redirection and graduated guidance more than through the use of contingency management procedures.

However, while a decrease in target behaviors as been achieved following 22 weeks of treatment, there is still a significant number of incidents of tantrum and tantrum-related behavior displayed by Shane. Further, it is also still necessary to use time out and quiet training procedures with Shane to cease non-compliance and tantrum and tantrum-related behavior. Finally, in the area of tantrum and tantrum related behaviors and quiet training the range increased instead of decreasing. These results indicate that following treatment procedures Shane's variability in behavior increased. Therefore, in some respects the program needs to be adapted to achieve more significant gains in changing Shane's behavior.

There are many factors that limited the effectiveness of this program and it is believed that if these factors were eliminated there would be a more significant change in Shane's behavior. First, there were inconsistencies in the way the program was implemented by different care providers and by Melissa. For instance, a certain instance of non-compliance observed by one care provider may have resulted in time out, whereas another care

provider may not have used time out in the same instance. Further, it is believed that Melissa and/or some care providers may have ignored instances of tantrum and tantrum-related behaviors. These factors cause Shane to be confused of what is expected of him. In order for Shane's problem behaviors to decrease, he needs to have consistent and structured expectations. This problem may be solved by having regular staff meetings to discuss Shane's behavior and to review the program procedures. Also, having the same person train all the care providers may help eliminate problems with inconsistencies among the staff.

Another limitation of the program, is the fact that on some days there was no data collected or the data was inconclusive for the day. An emphasis on the importance of recording incidents of tantrum and tantrum-related behavior, time out, and quiet training immediately following the incident may help eliminate this problem.

Further, another limitation to the effectiveness of the program is that Shane's schedule was not adhered to very rigidly. Many of the care providers adhered to Shane's daily schedule. However, many days Melissa would totally deviate from Shane's schedule without significant reason. Also, many times it is believed that changes in Shane's daily schedule were never explained to him. This is also very confusing for Shane and may explain why Shane's behavior did not change as significantly as originally thought.

In addition, there were some friends and relatives of Shane's that implemented the program and collected data after having only

read the program without proper training by the consultant, habilitative assistant, or a qualified care provider.

Finally, another limitation to this program is that many times the redirection and graduated guidance methods were not utilized properly by the staff working with Shane. For instance, on some occasions steps were skipped or Shane was not given adequate time to respond before the next step was implemented. On some occasions, these methods were not used at all when they definitely should have been. This problem could also be eliminated by regular staff meetings where the methods were reviewed in detail or by occasional observations of staff members working with Shane by either the habilitative consultant or by the habilitative assistant.

In conclusion, a decrease in Shane's problem behaviors was evident following treatment procedures. However, it is believed that more significant gains may be achieved in the future. By taking into account the limitations noted in the behavior change program and by making an effort to adapt and change the existing program many of these limitations may be successfully eliminated, thus, possibly leading to a more rapid and significant positive change in Shane's behavior.

Footnotes

[1]All proper names of the participants have been changed to maintain confidentiality.

1

APPENDIX A

DAILY DATA COLLECTION FORM

DATE: _____ START TIME: _____

STOP TIME: _____

TOTAL TIME: HRS. ____ MIN. ____

PENALTIES	FREQUENCY
TIME OUT	
QUIET TRAINING	

TARGET BEHAVIOR	# OF INCIDENTS
TANTRUM AND TANTRUM - RELATED BEHAVIOR	

CAREPROVIDER COMMENTS (FIRST NAME PLEASE)

AVERAGE RATE PER HOUR PER WEEK OF TANTRUM AND TANTRUM-RELATED BEHAVIOR

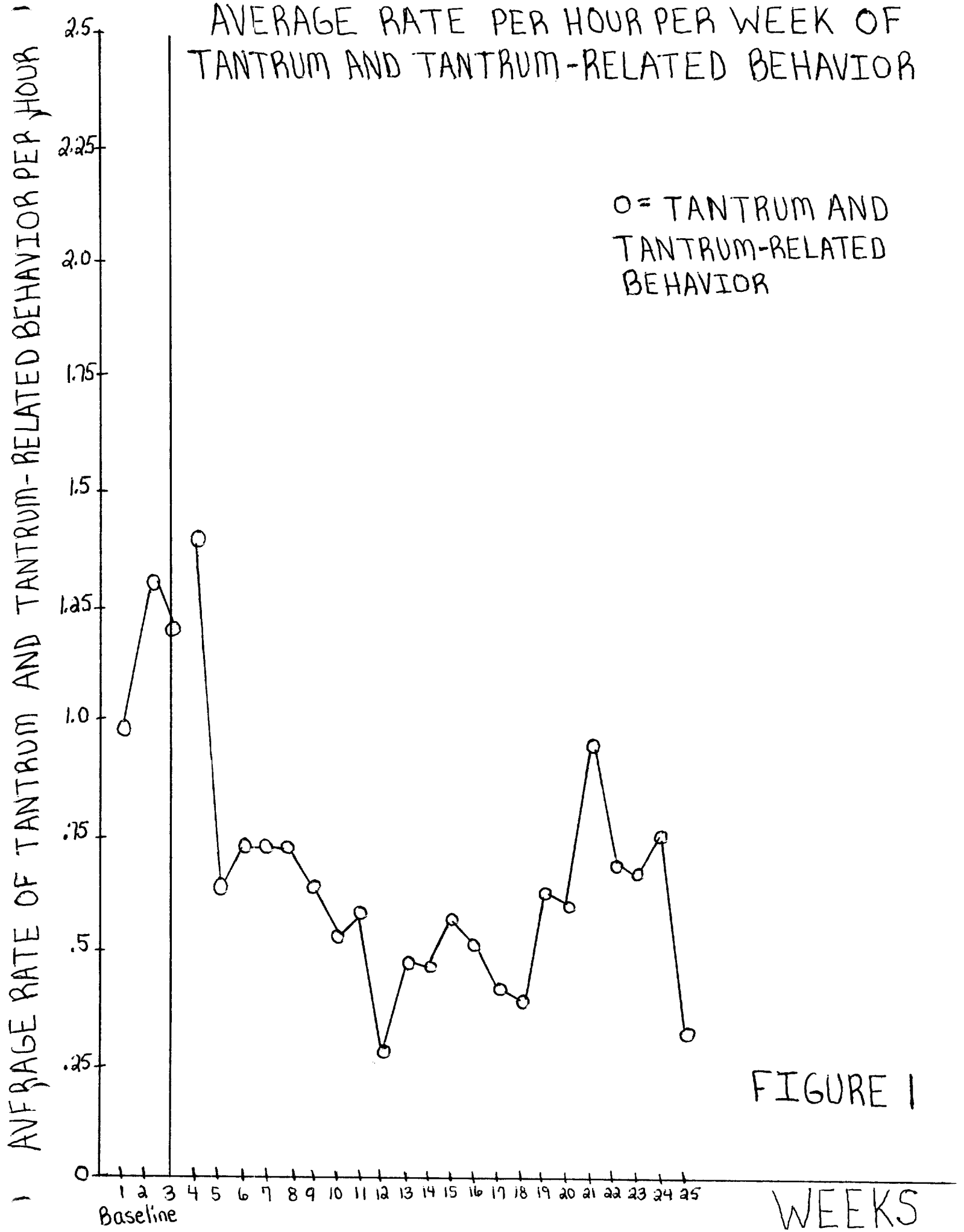

FIGURE 1

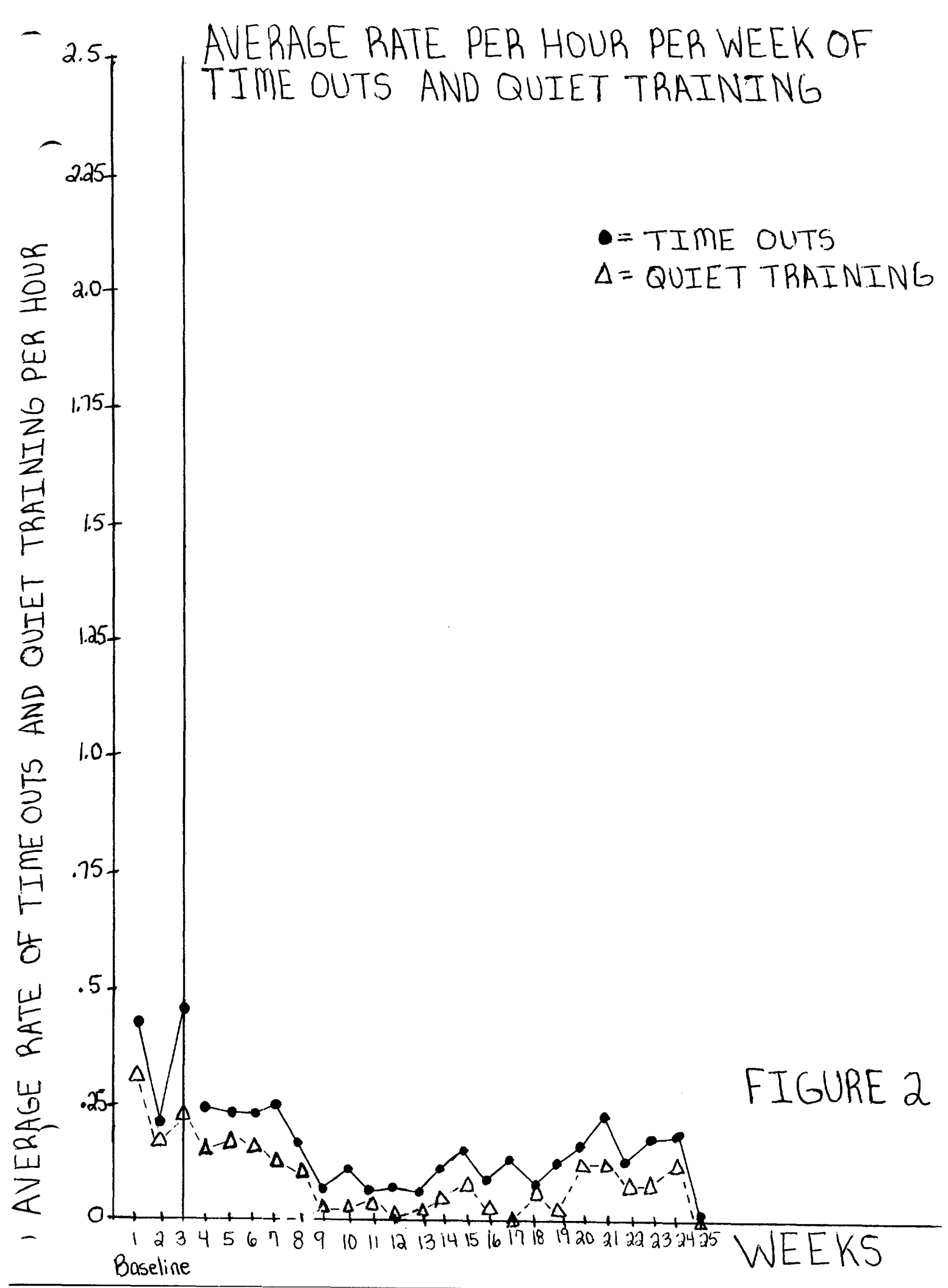
AVERAGE RATE PER HOUR PER WEEK OF TIME OUTS AND QUIET TRAINING
● = TIME OUTS
Δ = QUIET TRAINING
AVERAGE RATE OF TIME OUTS AND QUIET TRAINING PER HOUR
2.5
2.25
2.0
1.75
1.5
1.25
1.0
.75
.5
.25
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
Baseline
WEEKS

FIGURE 2